

Claims

1. A device for screen-process printing having a surface (11) for supporting an item (64) to be imprinted and a printing mechanism (12) consisting of at least a frame (14) and a squeegee holder (16) extending across the interior of the printing mechanism's frame (14) that may be translated along a longitudinal axis (13) within the printing mechanism's frame (14) for attaching a squeegee (44), wherein the printing mechanism (12) is arranged such that it may at least be translated along a plane orthogonal to the supporting surface (11) and parallel to the longitudinal axis (13), and means (22, 24, 26, 72, 74, 76, 78) for generating coordinated motions of the printing mechanism (12) and squeegee holder (16) are provided.
2. A device for screen-process printing according to claim 1, wherein the means (22, 24, 26, 72, 74, 76, 78) are configured such that they will maintain the printing mechanism's frame (14) tangential to a surface of the item (64) to be imprinted that is curved at least along the longitudinal axis (13) i.e. tangential relative to an imaginary line of contact between the squeegee (44) and an item

(64) to be imprinted during a printing motion of the squeegee (44), and, viewed along the lateral direction.

3. A device for screen-process printing according to any of the foregoing claims, wherein each end of the squeegee holder (14) is guided relative to the supporting surface (11) by a slotted guide (24, 26).
4. A device for screen-process printing according to claim 3, wherein the angular orientation of the squeegee holder (16) and its distance from the supporting surface (11) are governed by the slotted guides (24, 26), where the guides (18) for the squeegee holder (16) on the printing mechanism's frame (14) are configured such that an angular orientation of the squeegee holder (16) and the printing mechanism's frame (14) will remain constant, at least during a printing motion of the squeegee holder (16).
5. A device for screen-process printing according to claim 3 or claim 4, wherein at least one first rolling surface (36, 38) parallel to the slotted guides (24, 26), over which a second rolling surface (40, 42) of the printing mechanism's frame (14) rolls during a printing motion of the squeegee (44), is provided.

6. A device for screen-process printing according to claim 5, wherein the first and second rolling surfaces (36, 38, 40, 42) are provided with gear teeth.
7. A device for screen-process printing according to claim 1 or claim 2, wherein the angular orientation of the printing mechanism's frame (14) relative to the supporting surface (11) may be adjusted by several actuators (72, 74, 76, 78).
8. A device for screen-process printing according to claim 7, wherein a controller (80) for controlling the actuators (72, 74, 76, 78) is provided, where the actuators (72, 74, 76, 78) are controlled in a manner that depends upon a surface geometry of an item (64) to be imprinted and a location of the squeegee (44) relative to the item (64) to be imprinted.
9. A device for screen-process printing according to claims 7 or claim 8, wherein the actuators are configured in the form of column hoists (72, 74, 76, 78) driven by servomotors.
10. A screen-process method for imprinting curved surfaces having the stages of reading in a surface contour of an item (64) to be imprinted and aligning a printing mechanism (12) such that a screen

frame will be maintained tangential to the item (64) to be imprinted at all times during a printing motion of a squeegee (44) when seen along an imaginary line of contact between the squeegee (44) and the item (64) to be imprinted.